

SMALLEYUS TRICRISTATUS, NEW GENUS,
NEW SPECIES, AND *PSEUDOTHELPHUSA PARABELLIANA*,
NEW SPECIES (BRACHYURA: PSEUDOTHELPHUSIDAE)
FROM LOS TUXTLAS, VERACRUZ, MEXICO.

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Abstract.—One new genus and species, *Smalleyus tricristatus*, and a new species of *Pseudothelphusa*, *P. parabelliana*, are described from the Los Tuxtlas region in the State of Veracruz, Mexico. The new species described here belong to the Tribe Pseudothelphusini. The distribution patterns of both genera are discussed.

The Los Tuxtlas region of Veracruz lies adjacent to the coast of the Gulf of Mexico, and comprises the area between 18°10'N to 18°40'N and 94°45'W to 95°25'W. This region encompasses a small mountain range of volcanic origin, where the highest volcanic cone is more than 1700 m high. In this area four genera and six species of pseudothelphusid crabs co-occur: *Odonthelphusa maxillipes* (Rathbun, 1898), *Teihuana veracruzana* (Rodríguez & Smalley, 1969), *T. poglayenorum* (Pretzmann, 1980), *T. diabolis* (Pretzmann, 1980), *Smalleyus tricristatus*, and *Pseudothelphusa parabelliana* (described below). Topographic heterogeneity, the presence of tropical rainforest, and the fact that this is an isolated mountain range situated on the coastal plain, may account for much of the observed diversity. Future collections in southern Veracruz and Tabasco will confirm if, in fact, pseudothelphusid crabs are absent from these coastal lowlands. This suggests that Los Tuxtlas may have served as a refuge in the past and that its brachyuran fauna has been preserved. The sites where collections were made are at altitudes that range between 200 and 1000 m. All the organisms are deposited in the Carcinologic Collection, Instituto de Biología, Universidad Nacional Autónoma de México (IBUNAM).

Smalleyus, new genus

Diagnosis.—In cephalic view, proximal half of gonopod thinner than distal half. In mesial view, middle portion, along longitudinal axis, narrower than rest. In caudal view, lateral process also exhibiting constriction in middle portion. In lateral view, proximal half straight with constant thickness; distal half slightly curved caudally.

Apex of gonopod bearing 3 lobes: mesial, cephalolateral, and lateral. Mesial lobe with basal $\frac{2}{3}$ of crest disposed at 90° angle to longitudinal axis of gonopod; distal portion sloping proximally; small field of spines along mesial surface of crest; apical margin of crest serrate, spine size increasing distally. In cephalic view, mesial process with cephalic serrate projection, lying oblique to longitudinal axis of gonopod. Cephalolateral lobe with median ridge in apical cavity, cephalic blade-like projection oriented cephalolaterally. Apical median ridge rounded, bearing spines. Cephalolateral projection with 3 strong teeth. Lateral lobe forming lateral wall of apical cavity. Field of spines along lateral crest and lateral surface; spine size increasing laterally and cephalically. Field of terminal pore setae situated between median ridge and lateral crest. Sperm channel opening situated caudal to median ridge.

Type species. — *Smalleyus tricristatus*.

Etymology. — This genus is named after Dr. Alfred E. Smalley. Gender is masculine.

Smalleyus tricristatus, new species

Fig. 1

Material examined. — Camino Izquierdo, Sierra de Santa Marta, Veracruz (18°26'N, 94°57'W), Jul 1985, collector Mardocheo Palma: male holotype, c.b. 23.4 mm, c.l. 15.1 mm; 2 females, c.b. 27.2, 23.2 mm, c.l. 17.0, 14.9 mm, IBUNAM EM-7030. The large female had 19 juveniles in the abdomen.

Gonopod description. — Same as of genus.

Description. — Carapace slightly convex. Superior frontal border formed by sloping of carapace; inclined towards median region. Inferior frontal border well marked, formed by diffuse tubercles; sinuous in frontal view, arched in dorsal view. Median groove short, deep between front and post-frontal lobes. Cervical grooves straight. Notch on anterolateral margin between orbit and cervical groove. Anterolateral margin with 17–19 small blunt denticles between cervical groove and epibranchial region. Pterygostomian region, around third maxillipeds, covered with setae. Third maxilliped with ischium/exopod ratio of 0.71. Five rows of spines on dactylus of walking legs. Strong heterochely in males, in females obvious size differences. Cutting margins of propodus and dactylus of major chelae with alternating large and small teeth, when closed large teeth opposing small ones on opposite finger.

Type. — The holotypic male is deposited in the Carcinologic Collection, Instituto de Biología, Universidad Nacional Autónoma de México (Catalog No. EM-7029).

Etymology. — From the Latin “tri” (three) and “crista” (crest), referring to the three crests on the apex of the male’s gonopod.

Remarks. — *Smalleyus* belongs to the Tribe Pseudothelphusini because it exhibits a curved sperm channel, a reniform mesial

process, and a discernible lateral lobe. A new genus is created due to the presence of: a mesial process whose shape is not completely reniform as in *Pseudothelphusa* or *Tehuana* and bearing spines along its superior margin; a cephalic serrate projection of the mesial process; three ridges (crests) on the apex of the gonopod, the median one partly filling what would otherwise be the apex cavity; a cephalolateral lobe, which seems to be a continuation of the median apical ridge; a lateral lobe, which corresponds to the lateral lobe in the genus *Pseudothelphusa*, but in this crab occupying a more caudal position; and three spine fields, one on each one of the three apical ridges. The relationships of this genus with the other genera of the tribe are not clear. However, this aberrant form, together with *Spirothelphusa*, *Lobithelphusa*, *Odontothelphusa*, and *Disparithelphusa* constitute a belt of monotypic genera dispersed along the Isthmus of Tehuantepec. Even though these taxa belong to three different tribes, the factors influencing the origin of these five genera may be similar. In this case, the isthmus represents a barrier that these crabs could not cross (Rodríguez 1987). *Epithelphusa* with two species, occurring in the same area, has more distinct affinities. Rodríguez (1982) places the genus linking the tribes Hypolobocerini and Pseudothelphusini. The affinities of the monotypic genera mentioned are obscure, with the exception of *Odontothelphusa* which derives from the genus *Potamocarcinus*.

Pseudothelphusa parabelliana, new species

Fig. 2

Material examined. — Cerro El Vigía, Los Tuxtlas Biological Station, Veracruz (18°35'N, 95°03'W), 7 Jul 1986: male holotype, c.b. 24.5 mm, c.l. 15.8 mm; 1 male paratype, c.b. 21.4 mm, c.l. 13.0 mm; 2 females, c.b. 34.1, 19.2, c.l. 21.3, 11.9 mm, IBUNAM EM-7031. Same locality, 30 Aug 1984, collector Mardocheo Palma: 1 male

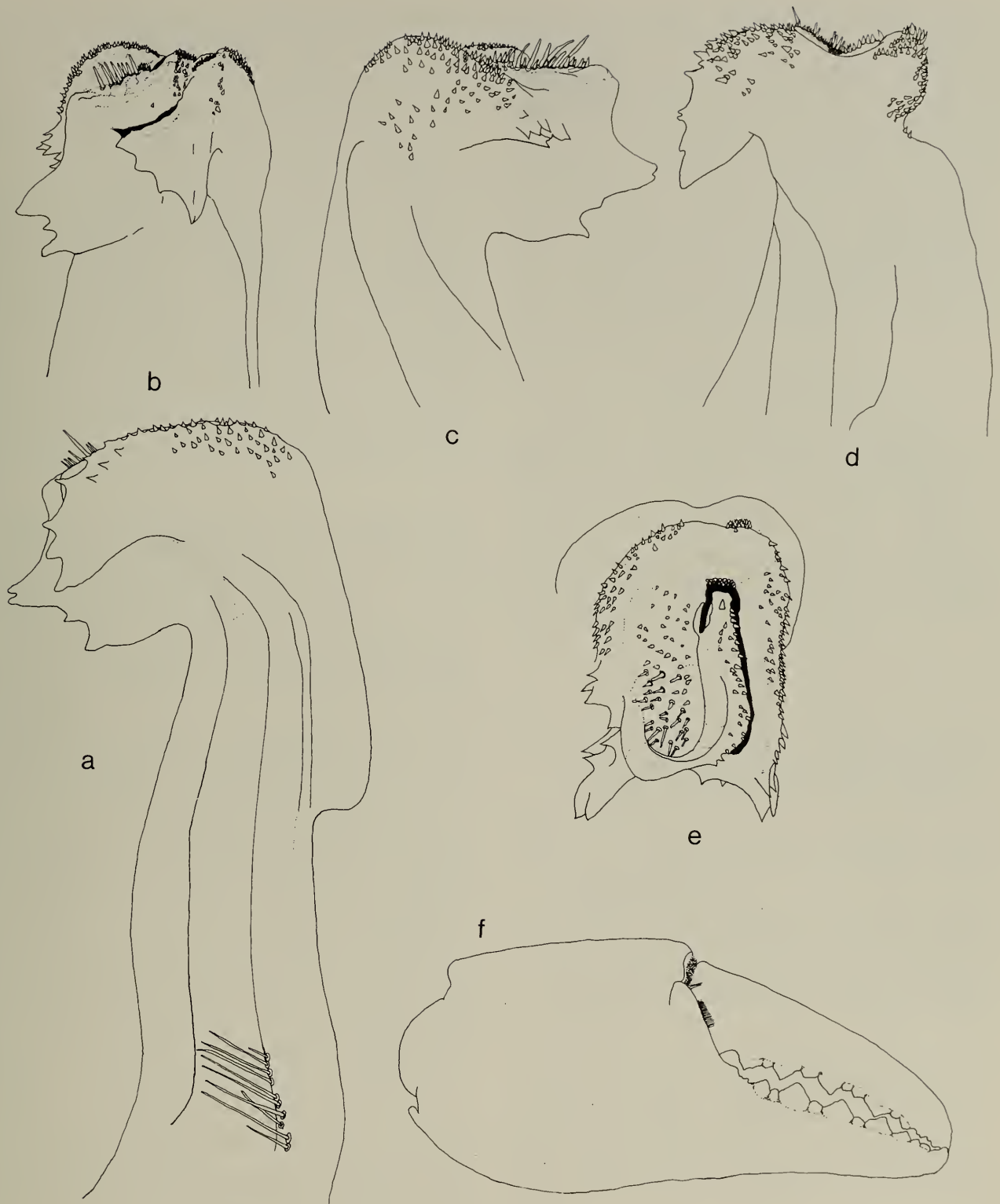


Fig. 1. Left gonopod and major chela of *Smalleyus tricristatus*: a, Total mesial view; b, Cephalic view of apex; c, Lateral view of apex; d, Caudal view of apex; e, Apical view; f, Right chela.

paratype, c.b. 23.9 mm, c.l. 14.8, IBUNAM EM-7032; 5 females c.b. 32.3, 29.2, 27.7, 22.7, 20.9 mm, c.l. 18.8, 17.6, 16.8, 14.0, 13.6 mm, IBUNAM EM-7033. Same locality, 7 Jul 1986, 1 female with 8 juveniles

in abdomen, c.b. 28.0 mm, c.l. 16.9 mm, IBUNAM EM-7034.

Description.—Carapace slightly convex. Superior frontal border absent, but front limited by edge. Front inclined in dorsal

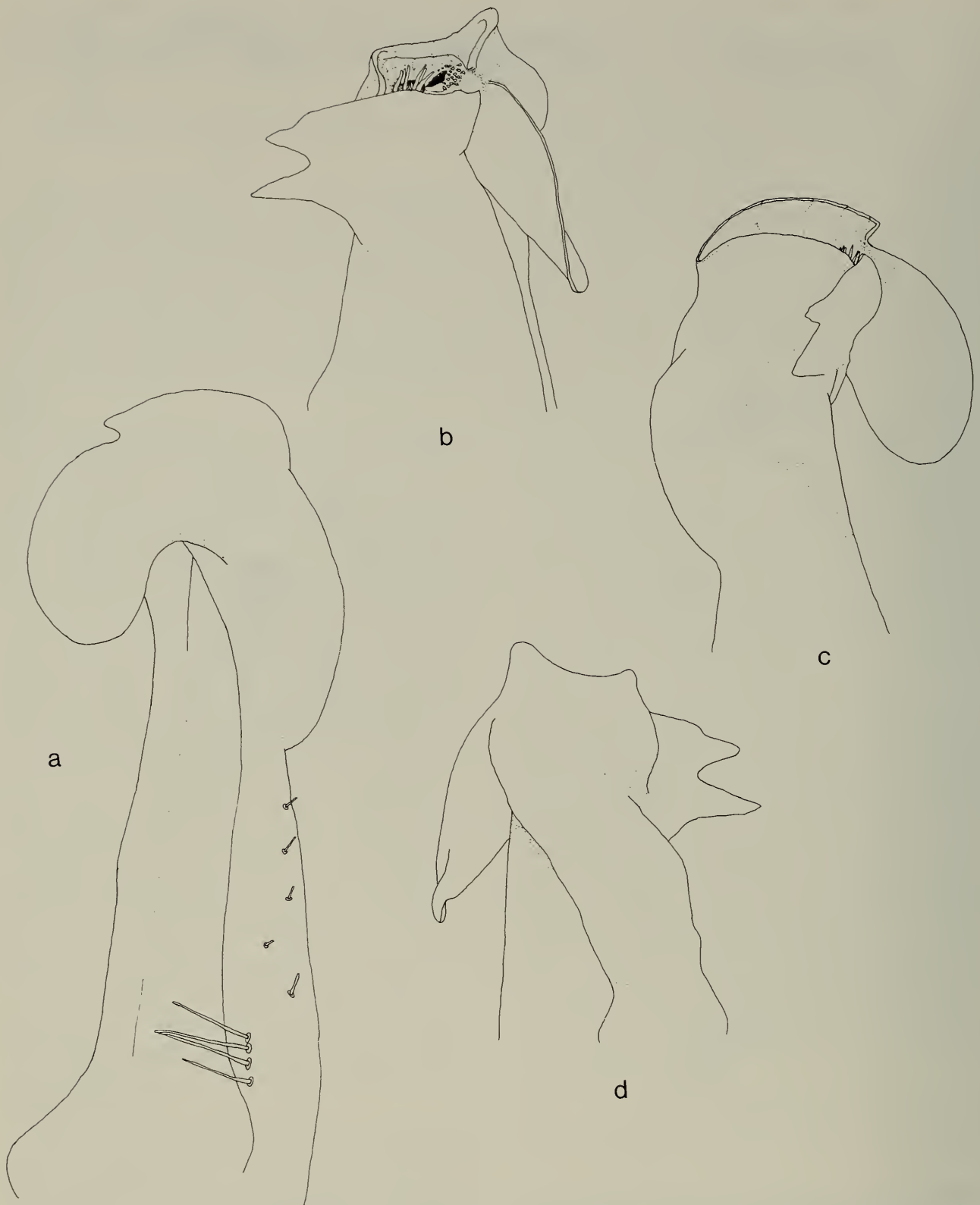


Fig. 2. Left gonopod of *Pseudothelphusa parabelliana*: a, Total mesial view; b, Cephalic view of apex; c, Lateral view of apex; d, Caudal view of apex.

view. Inferior frontal border smooth, somewhat bilobed in dorsal and frontal views. Median groove narrow, deep, dividing superior edge of front and separating post-

frontal lobes. Cervical grooves shallow, wide, straight; not reaching anterolateral margin. Anterolateral margin with slender notch lateral to orbit. Anterolateral margin

with 16–19 denticles between cervical groove and epibranchial region. Ratio ischium/exopod of third maxilliped 0.91. Pterygostomian region covered with setae. Major chelae right, fingers not gaping.

Gonopod description.—Well developed reniform mesial process. Marginal process reduced to acute spine. Mesial crest rounded. Lateral lobe completely closing apical cavity cephalically and ending in 2 tips distally; inferior sharper than superior. Lateral lobe with mesial surface triangular. Terminal pore setae 19. Setal field restricted to lateral portion of cavity. Mesial crest higher than lateral. Opening of sperm channel caudal.

Type.—The holotypic male is deposited in the Carcinologic Collection, Instituto de Biología, Universidad Nacional Autónoma de México (Catalog No. EM-7028).

Etymology.—From the Latin “para” (beside) and “belliana” a freshwater crab specific name.

Remarks.—Before this species was described the genus *Pseudothelphusa* was known only from the central part and Pacific slope of Mexico. The presence of *P. parabelliana* now widens this distribution to the 95°W meridian. This species seems to be closely related to *P. belliana* Rathbun, 1898, which occurs in the states of Guerrero, Michoacán, and México. The gonopod of *P. parabelliana* has a lateral lobe with two acute distal tips, a straight mesial crest, and the mesial process is much larger in relation to the marginal process. In *P. belliana* the lateral lobe bears only one distal tip, the mesial crest is broadly rounded, and the mesial process is slightly larger than the

marginal process. The occurrence of *P. parabelliana* in the Gulf coast of Mexico agrees well with the morphocline proposed recently by Rodríguez (1987). He places on a west-east axis, across central Mexico, a succession of species (including *Tehuana veracruzana*, *P. guerreroensis* Rathbun, 1933, *P. belliana*, *P. americana* de Saussure, 1857, and *P. peyotensis* Rodríguez & Smalley, 1969) in which a progressive reduction of the lateral lobe can be seen.

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